

REMARKS

Claims 1-25 are pending. All claims stand rejected for obviousness under 35 U.S.C. § 103. More specifically, claims 1-6, 8, 9, 11, 15, 18, 20, 24 and 25 were rejected based on the combination of 2003/0046324 to Suzuki *et al.* ("Suzuki") with 2002/0152185 to Jamadagni *et al.* ("Jamadagni"), claims 7 and 19 were rejected based on Suzuki and Jamadagni in combination with 5,764,953 to Collins *et al.* ("Collins"), claims 10, 13, 17, 22 and 23 were rejected based on Suzuki and Jamadagni in combination with 2003/0197632 to Rubin *et al.* ("Rubin"), claim 12 was rejected based on Suzuki and Jamadagni in combination with 5,893,155 to Cheriton ("Cheriton"), claim 14 was rejected based on Suzuki and Jamadagni in combination with 2003/0005099 to Sven *et al.* ("Sven"), and claim 16 was rejected based on Suzuki and Jamadagni in combination with 6,639,538 to Sechi *et al.* ("Sechi").

These rejections are traversed on the grounds that a number of features in the present claims are not taught or suggested in the cited references, and the differences between the present claims and the cited references would not have been obvious to one of ordinary skill.

Independent Claims 1 and 13

More specifically, with reference to independent claim 1, the present invention is directed to a method of managing events in a standard computer system, where the event management includes, for example, receiving events, time-stamping and storing the events, assigning at least one appropriate action to each received event, and executing that action in response to the received event, and where these event management steps are "carried out in real time without access to the central unit [of the standard computer system] by a management unit included in an independent management module connected to the data bus and incorporated into the standard computer system." Independent claim 13 is an apparatus claim directed to the event management module.

As discussed in the present Specification, the present invention uniquely and advantageously provides real-time event management capability to a standard computing system by providing a single additional management module that is configured to execute an action in response to an event with a very short response time without the intervention of the central unit. This enables very fast and accurate processing of incoming discrete signals without involving the central unit which may therefore be

used for any other task, which is very advantageous in the aerospace field and in other industrial processes.

The Art Applied

These aspects of the present invention are not taught or suggested in the cited references. The Suzuki reference discusses a controller 1 comprising a memory 17, a CPU 100, a network control circuit 11, an I/O interface 10 and a bus connecting these elements. (See, e.g., Figs. 1 and 43). The I/O interface 10 is connected to a LAN 40 constituting a network communications system. The I/O interface 10 is connected to devices 301-30n as targets to be monitorially controlled. As disclosed, for example, in para. [0078], cited by the Examiner, the CPU 100 is provided as information processing means for processing information obtained from the LAN 40 and from each of the devices 301-30n.

The memory 17 of Suzuki includes a communication task group 13, a control task group 141, a management task group 142, task group execution mode switching 15, and a real-time operating system 16. The task group execution mode switching 15 is provided as a task-switching means for managing a plurality of tasks by classifying them into the communications task group 13 for communicating with the LAN 40, the control task group 141 for monitorially controlling the devices 301-30n, and the management

task group 142 for management, including internal monitoring of the CPU 100. (See para. [0079]).

Significantly, Suzuki teaches that "[t]he programs executed by the CPU 100 are those for the communications task group 13, the control task group 141, the management task group 142, the task group execution mode switching 15, and the real-time operating system 16," and "[a]ccording to the invention, an object is to execute both control processing and network communication processing in coexistence on one microprocessor and, basically, the number of microprocessors (CPU) on the controller is one." (See para. [0080]-[0081]).

Furthermore, in para. [0011], cited by the Examiner, Suzuki explicitly teaches that "real-time execution of control processing and throughput of network communication processing are guaranteed by one information processing means."

Thus, Suzuki teaches a system in which a single central unit (CPU) is used to execute both real-time event management (i.e. "control processing") as well as the network communication processing. Switching between both types of processing is realized by the task group execution mode switching 15 in accordance with a priority order.

In contrast, according to the present invention, the real-time management of events is realized by a management unit 70 that operates separately from and independently of the central unit 10. This is not taught or suggested in Suzuki, nor is it described or illustrated in any of the embodiments of the Suzuki reference, including the "basic configuration" of Fig. 1 and the "decentralized" system of Fig. 43. In all embodiments, a single central unit performs all event management as well as network communication processing, and there is no teaching or suggestion of a management unit, separate and independent from the central unit, as is recited in the present claims. Rather, Suzuki teaches away from this approach by explicitly teaching that the real-time execution of control processing and throughput of network communication processing are guaranteed by one information processing means.

Moreover, as acknowledged by the Examiner, Suzuki fails to disclose that the events are time-stamped.

The deficiencies with respect to Suzuki are not overcome by the Jamadagni reference, which discloses a method for network modeling and predictive event correlation in a communication system by the use of contextual fuzzy cognitive maps (FCM). The method is used to detect and isolate faults by correlating event

streams from a communication system. FCM is a signed directed path, where nodes represent events and edges represent the partial causal flow between events and is used to determine the effect of an event on another event. (See para. [0050]-[0064]). In particular, para. [0064], cited by the Examiner, indicates that an event consists of a time stamp, event type, event subtype, etc.

Jamadagni is concerned with correlating events in order to detect faults in a network system, which is a relatively remote field and is not relevant to the event management methods and modules of the present claims. Furthermore, like Suzuki, Jamadagni does not disclose or suggest managing events in real time without access to a central unit by a management unit included in an independent management module connected to the data bus and incorporated into a standard computer system.

Thus, even in combination, Suzuki and Jamadagni do not disclose all features of the present claims and cannot render obvious independent claims 1 and 13.

Furthermore, the deficiencies with respect to Suzuki and Jamadagni do not appear to be overcome by any of the secondary references to Collins, Rubin, Cheriton, Sven and Sechi. Collins discusses a system that integrates active and simulated decision-making processes and is cited for disclosing a clock control.

Rubin discusses an integrated digital controller for controlling power electronic devices, and is cited for disclosing a digital phase locked loop and a dual port RAM. Cheriton discusses a digital computer memory cache organization and is cited for disclosing generating an interrupt when a log translation is missing. Sven discusses a control management system and is cited for disclosing a USB bus. Sechi discusses a transient pulse monitoring system and method and is cited for disclosing a memory buffer that operates in a FIFO fashion.

None of these cited references, considered individually or in combination, disclose or suggest the method of managing events as specified in independent claim 1, or the event management module as recited in independent claim 13. Accordingly, it is submitted that the rejections of these claims are overcome, and that claims 1 and 13 and their respective dependents, claims 2-12 and 13-25, are all allowable.

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The Examiner is encouraged to telephone the undersigned attorney to discuss any matter that would expedite allowance of the present application.

Respectfully submitted,

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